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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/697,290	10/31/2003	Stefan Johansson	1503-1054	8453

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EXAMINER	
DOUGHERTY, THOMAS M	
ART UNIT	**PAPER NUMBER**
2834	

DATE MAILED: 06/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/697,290	JOHANSSON, STEFAN	
	Examiner	Art Unit	
	Thomas M. Dougherty	2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 October 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *31 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *104, 305*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 4, 5, 7-10, 13, 14, 16, 17, 19, 23 and 24 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Robertson (US 3,389,274). Robertson shows (figs. 4, 5) an electromechanical actuator, comprising; a body (51); a peristaltic actuating element (52) extended in a main motion direction; the peristaltic actuating element (52) in turn comprising: interaction surface with the body (51); volumes of electromechanical material (53-64); electrodes (65) for excitation of the volumes of electromechanical material (53-64); and control means (66-70) for supplying voltage signals to the electrodes (65); the volumes of electromechanical material (53-64) and the electrodes (65) being arranged to cause the peristaltic actuating element to change a dimension difference between the peristaltic actuating element (52) and the body (51) parallel to the main motion direction.

The change of the dimension difference between the peristaltic actuating element (52) and the body (51) has a component in a dimension essentially parallel to the main motion direction. See col. 3, ll. 55-62.

The length of the peristaltic section (any of 53-64) is less than half an entire length of the peristaltic actuating element (51).

The length of the peristaltic section (53-64) is considerably less than half the entire length of the peristaltic actuating element (52).

The change of dimension difference along the main motion direction is caused by an expansion of the peristaltic section. Again see col. 3, ll. 55-62.

The volumes of electromechanical material (53-64) and the electrodes (65) being arranged to further cause the interaction surface within the peristaltic section (an of 53-64) to be removed from the body (51) to be moved within the peristaltic section (any of 53-64) simultaneously as the change in dimension difference parallel to the main motion direction. Again see the discussion at col. 3, ll. 55-62.

The volumes (53-64) themselves constitute the dominating part of the peristaltic actuating element (52).

The peristaltic actuating element (52) in turn comprises a continuous body of elastic material to which the at least one volume of electromechanical material (53-64) is attached.

The interaction surface is a continuous interaction surface along substantially the entire peristaltic actuating element (52) in the main motion direction.

The interaction surface is a sectioned interaction surface, whereby the interaction surface sections being dispersed along substantially the entire peristaltic actuating element in the main motion direction. Note that the interaction surface is yet continuous as the sections (53-64) are continuously connected.

Robertson teaches a method of driving a peristaltic actuator, comprising the steps of: positioning a peristaltic actuating (52) element against a body (51), the peristaltic element (52) having electromechanical volumes (53-64) arranged for locally changing a dimension difference between the peristaltic actuating element (52) and the body when activated; selectively activate (via 66-69) the electromechanical volumes (53-64) for moving a peristaltic section (53-64) in which the dimension change is present substantially continuously along the peristaltic actuating element (52) parallel to a first direction; whereby the peristaltic actuating element (52) remaining in non-sliding contact with the body (51) by sections of the peristaltic element (52) outside the peristaltic section (53-64).

The change of the dimension difference between the peristaltic actuating element (52) and the body (51) has a component in a dimension essentially parallel to the first direction. See again, col. 3, ll. 55-62.

Said change in dimension difference is caused by an expansion of the peristaltic actuating element (52). Again see col. 3, ll. 55-62.

As noted above, the length of the peristaltic section (53-64) is less than half an entire length of the peristaltic actuating element (52).

As noted above, the length of the peristaltic section (53-64) is considerably less than half the entire length of the peristaltic actuating element (52).

Claims 1, 3, 4-6, 9-11, 14-16, 18, 20-24 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Culp (US 5,283,497)). Culp shows (figs. 1-5, 7) an electromechanical actuator, comprising; a body (12); a peristaltic actuating element (2)

extended in a main motion direction; the peristaltic actuating element (2) in turn comprising: interaction surface (5) with the body (2); volumes of electromechanical material (4); electrodes (6) for excitation of the volumes of electromechanical material; and control means (22, 25, 31, 36, 38, see fig. 7) for supplying voltage signals to the electrodes (6); the volumes of electromechanical material (4) and the electrodes (6) being arranged to cause the peristaltic actuating element to change a dimension difference between the peristaltic actuating element (2) and the body (12) parallel to the main motion direction.

The change of the dimension difference between the peristaltic actuating element (2) and the body (11) has a component in a dimension essentially orthogonal to the main motion direction. See figures 2 and 3a-f.

The length of the peristaltic section is less than half an entire length of the peristaltic actuating element (2).

The length of the peristaltic section is considerably less than half the entire length of the peristaltic actuating element (2).

The change of dimension difference along the main motion direction is caused by a contraction of the peristaltic section. Again see figures 2 and 3a-f.

The volumes themselves constitute the dominating part of the peristaltic actuating element (2).

The peristaltic actuating element (2) in turn comprises a continuous body of elastic material to which the at least one volume of electromechanical material is attached.

A contraction of the peristaltic actuating element perpendicular to the main motion direction causes the interaction surface (5) within the peristaltic section to be removed from the body (12). See figure 3, for example 3c and 3d, where contraction lifts the peristaltic section from the body.

The interaction surface is a sectioned interaction surface (in this instance 12 is the interaction surface for motion of 20, see motion direction 30 in figure 2), whereby the interaction surface sections being dispersed (note separation of elements 12 in figure 4) along substantially the entire peristaltic actuating element in the main motion direction.

Culp teaches a method of driving a peristaltic actuator, comprising the steps of: positioning a peristaltic actuating (2) element against a body (12), the peristaltic element (2) having electromechanical volumes (4) arranged for locally changing a dimension difference between the peristaltic actuating element (2) and the body (12) when activated; selectively activate (via 35, which is output of 31, see figure 7) the electromechanical volumes (4) for moving a peristaltic section (4) in which the dimension change is present substantially continuously along the peristaltic actuating element (2) parallel to a first direction (e.g. 30); whereby the peristaltic actuating element (2) remaining in non-sliding contact with the body (12) by sections of the peristaltic element (2) outside the peristaltic section (4).

The change of the dimension difference between the peristaltic actuating element (2) and the body (12) has a component in a dimension essentially orthogonal to the first direction, as noted above.

Said change in dimension difference is caused by a contraction of the peristaltic actuating element (2). Again see figs. 2 and 3a-f.

A further step is: imposing a dimension change of the peristaltic actuating element (2) within the peristaltic section (2) in a second direction, different from the first direction, simultaneously as the step of causing the dimension difference change.

Said dimension change in the second direction is a contraction, as noted above.

As noted above, the length of the peristaltic section (4) is less than half an entire length of the peristaltic actuating element (2).

As noted above, the length of the peristaltic section (4) is considerably less than half the entire length of the peristaltic actuating element (2).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 12, 25 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Robertson (US 3,389,274) in view of Baudendistel (US 6,664,711). Given the invention of Robertson as noted above, he doesn't show an interaction surface with an interaction body which are removed from the interaction surface when driven. He doesn't show specific bending.

Baudendistel shows (fig. 1, 2) an interaction surface (12) with an interaction body which are removed from the interaction surface (14) when driven. He shows bending of his element 12.

It is not clear that he drives the motor in a peristaltic fashion and he doesn't show specific control means.

It would have been obvious to one having ordinary skill in the art to arrange the interaction body (which in Robertson comprises a peristaltic actuating element) which is connectable and separable from the interaction surface in the device of Robertson such as is shown by Baudendistel because this is a means to drive a rotor that "provides a more robust and more smoothly operating motor" etc. as he notes in col. 2, lines 4-7.

It would have alternatively been obvious to one of ordinary skill in the art to employ the peristaltic actuator and control means of Robertson in the device of Baudendistel at the time of his invention since Robertson notes that no clamping type holding means, as Robertson notes.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The remaining prior art cited reads on some aspects of the claimed invention.

Direct inquiry to Examiner Dougherty at (571) 272-2022.

tmd

tmd

June 23, 2005

THOMAS M. DOUGHERTY
PRIMARY EXAMINER